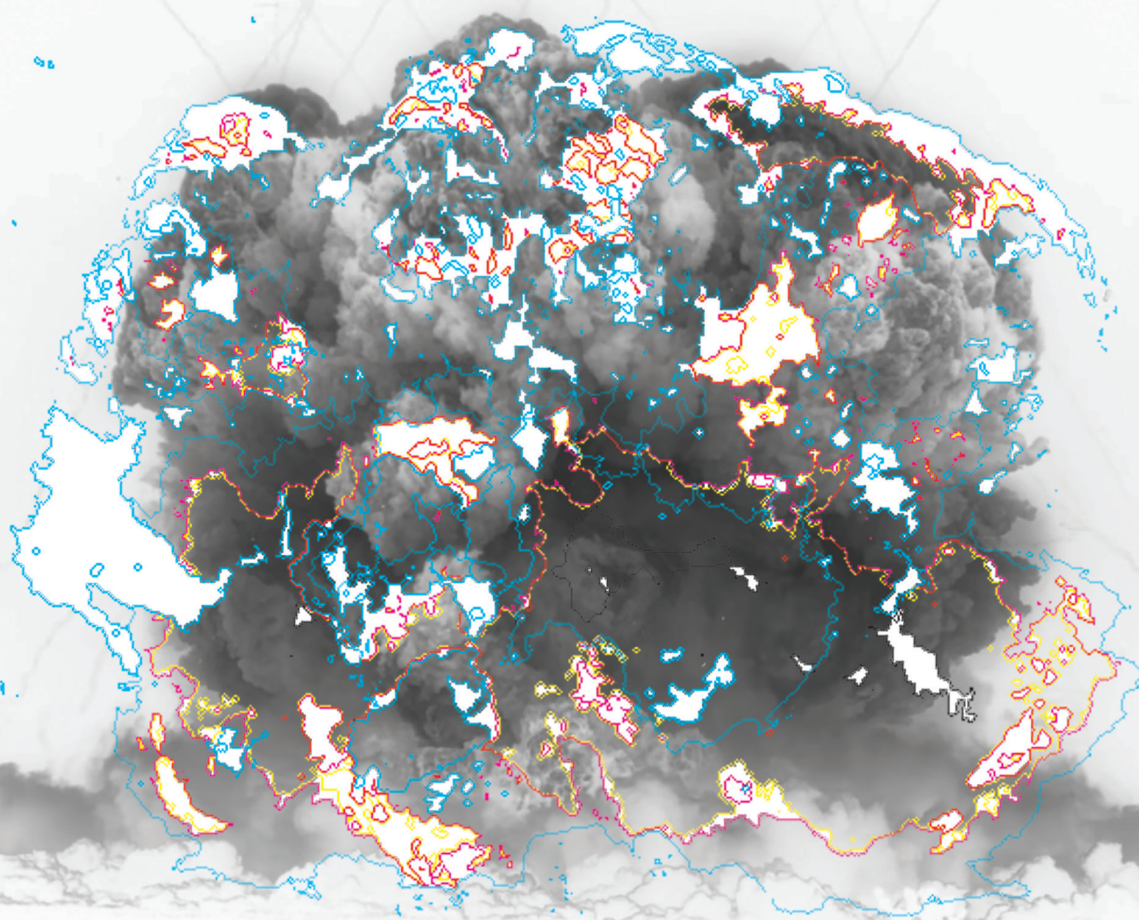


# '17



**CTBTO YOUTH GROUP**  
**ANNUAL REPORT**

**“IT FILLS ME WITH INSPIRATION TO SEE  
SENIOR POLICYMAKERS AND EXPERTS  
COMING TOGETHER WITH THE “NEW  
KIDS ON THE BLOCK” - THE YOUTH. YOU  
ARE NOT CALLED THE LEADERS OF  
TOMORROW BUT THE LEADERS OF  
TODAY.”**

CTBTO EXECUTIVE SECRETARY LASSINA ZERBO  
2017 CTBT: SCIENCE & TECHNOLOGY CONFERENCE



*Cover: The digital art on the cover is inspired by the CTBTO's ability to model the release of radio-isotope clouds from atmospheric nuclear tests.*



## FROM THE DESK OF THE EXECUTIVE SECRETARY



It is with a deep sense of gratitude that I present to you the activities of the CTBTO Youth Group members throughout 2017. They have not missed a pace. The CTBTO youth initiative was launched in 2016 and started out with nine members. Today the group is more than three hundred strong – and counting. Members come from around 70 countries. All of the world's continents and regions are represented.

Young people are not only the future, they are our present. It is the youth who always aim for the impossible and with whom the entry into force of the Comprehensive Nuclear-Test-Ban Treaty will be possible.

There has not been one activity in which our Youth Group members were involved that did not take on a new dimension, filled with enthusiasm, innovation and which significantly expanded the CTBTO's outreach. Numerous articles have been published in newspapers worldwide. New audiences have been reached and brought on board, and the members themselves have expanded their knowledge and understanding and brought the world closer through their unity.

It is truly humbling to see what a difference 'opportunity' can make. The CTBTO Youth Group is open to all students and young professionals who are directing their careers towards global peace and security and who believe that the entry into force of the CTBT is the next vital (and simplest) step in that direction.

More than an advocacy group, the CTBTO Youth Group provides a platform for young people to exchange knowledge and develop a deeper understanding of the challenges faced in other countries. More importantly, CTBTO Youth Group activities are structured to form lasting bonds among the members in the hope that this unity will surpass politics and focus on what matters to all.

Special thanks go to our Member States. Without their enthusiasm and generous support it would not have been possible to ensure that the Youth Group members can benefit from all that the CTBT has to offer. This year was marked with the first CTBTO Youth Group Conference, which took place in the Russian Federation. We look forward to many more.

Members of the CTBTO's Group of Eminent Persons have been instrumental in capacity building initiatives to ensure that the knowledge gained through years of dealing in matters of arms control are passed on to the generation that will bring the CTBT into force and implement it to enhance international peace and security.

I conclude with a message to youth from Dr Hans Blix, former Director General of the International Atomic Energy Agency and current member of the CTBTO's Group of Eminent Persons: Keep learning. Be constructive, convinced and UNITED.

Again, my sincere thanks to all. Let's finish what we started!

**LASSINA ZERBO**

EXECUTIVE SECRETARY OF THE COMPREHENSIVE  
NUCLEAR-TEST-BAN TREATY ORGANIZATION

# 2017 IN REVIEW

**2017  
Nuclear Non-Proliferation  
Treaty PrepCom  
(VIENNA, AUSTRIA)**



**2017 CTBT: Science & Technology  
Conference (VIENNA, AUSTRIA)**



**CTBTO Youth Conference  
(MOSCOW, RUSSIA)**

**2017 World Science Forum  
(DEAD SEA, JORDAN)**

**"As we meet at the lowest point on  
our Earth, we must set ourselves the  
highest goals for our future, to achieve  
a global peace that is built on science,  
innovation, and inclusiveness"**  
- HRH Princess Sumaya  
bint El Hassan

**European Geosciences Union  
General Assembly  
(VIENNA, AUSTRIA)**

**Global Platform for  
Disaster Risk Reduction  
(CANCUN, MEXICO)**

**10th Article XIV  
Conference  
(NEW YORK, USA)**

**UN Open Day  
(GENEVA, SWITZERLAND)**

**Article XI. Signature**  
This Treaty shall be open to all States for signature before  
its entry into force.

**Article XIV. Entry into force**  
1. This Treaty shall enter into force on the day of deposit of the  
fiftieth instrument of ratification or accession.

**Article XV. Reservations**  
1. No reservations shall be made to this Treaty.  
2. Any reservation made to this Treaty shall be null and void.



# + INCLUSION

## + INTERGENERATIONAL

This year, exchanging views on a proactive and integrated outreach strategy that involved both CTBTO Youth Group (CYG) and Group of Eminent Persons (GEM) was key. Whether meeting with youth on the margins of CTBTO events or peer-reviewing their reports and op-eds, high-level GEM members have been immensely supportive of CYG members.

**"I find it exciting that the youth group has members from so many different countries. And also that some of them are from countries that have neither signed nor ratified the Treaty. Many of these CYG members could become the next leaders of their countries.**

**They are people who may have just finished their doctorate theses or even people like me who are in high school and are just concerned about nuclear proliferation and putting an end to nuclear testing.**

**I would say that one of the problems of the CTBT and its ratification is that the public and even governments don't understand its importance. Today's youth WILL be the leaders of the future. The conviction of the adults of the future could be sufficient to make governments listen."**

JAKOB DOMENIG, AUSTRIAN CYG MEMBER

## + INTERSECTIONAL

Achieving a balance of disciplines and backgrounds within the CTBTO Youth Group has been a fruitful goal in 2017. By incorporating more students from the hard and soft sciences, the CYG has been able to better leverage the technological strengths of the CTBT and, in turn, better socially and politically translate them to public audiences.

## AVOIDING "MANELS": REFLECTIONS ON GENDER AND NON-PROLIFERATION



SARAH BIDGOOD

The United Nations (UN) nonproliferation and disarmament communities have a persistent gender problem.

Deliberations on nuclear weapons issues are disproportionately dominated by men, and women are vastly underrepresented on national delegations. At the 2015 NPT review conference, for example, only 26.5% of delegates were women. At the UN First Committee meeting that same year, women delegates made up a mere 29.7% of registered participants. This disparity has not been lost on Member States or civil society; members of both communities have increasingly called for more equal representation in recent years.

This problem has many underlying causes. The first of these relates to perceptions about disarmament and nonproliferation: as expressed in a 2016 UNIDIR study on the gendered aspects of nuclear weapons, security issues generally are viewed as men's territory. We know this because, in UN bodies dealing with humanitarian issues and development, there is near gender parity. The second relates to education and training: the importance of nonproliferation and disarmament education in advancing the goal of a world free of nuclear weapons is being recognized more widely by the international community. Nevertheless, opportunities to build capacity on these issues—learning how to think and not what to think about nuclear weapons—are still too few to meet our needs. As a result, women who might be interested in these topics are not sufficiently exposed to them; those who are may lack the resources to develop an expertise. These and other challenges must be addressed if we want to fix this systemic problem.

Why should this be our objective? There are a multitude of motivations, each of which should resonate with any state regardless of its security concerns or priorities. I will highlight only two: First, women and girls are disproportionately more affected by nuclear explosions from a biological standpoint. Ionizing radiation that is

emitted by a nuclear blast has profoundly more severe stochastic effects on women's bodies than men's. This has been demonstrated by numerous scientific studies, including one which found that the rate of death from solid cancer for women survivors of the nuclear weapons attacks on Hiroshima and Nagasaki was nearly twice as high as that of men. In this respect, women and girls must have an equal say in determining the future of these weapons. While men can, and should, factor gender into the disarmament and nonproliferation agendas, women themselves must be a part of these conversations. Without adequate representation, this is not achievable.

Second, and in some ways more urgent, the problems of nonproliferation and disarmament are proving to be enduring. While US President John F. Kennedy's nightmare of a world with twenty nuclear armed states by 1964 was averted in no small part by effective diplomacy, the international community continues to grapple with realizing the goal of a world free of nuclear weapons. In this respect, we cannot afford to exclude any creative voices from conversations about these issues. All people who can contribute to resolving this challenge must be empowered to do so irrespective of gender or, for that matter, nationality, race, sexual orientation, or any of the plethora of intersecting human identities. We are setting ourselves up for failure if discussions around nuclear weapons remain the purview of a select few.

With this as background, I have been very encouraged by the deliberate way in which the CTBTO has approached gender at its 2017 Science and Technology Conference. For example, the conference planners have made a conscious effort to avoid "manels," a portmanteau of the words "men" and "panels" that describes presentations delivered entirely by male participants. This commitment was strikingly evident on the first day of the conference when six women experts from the scientific and commercial spheres discussed challenges to the IMS regime before a packed room. Similarly,

the opening ceremony of the conference featured exclusively women keynoters. This conference policy is valuable because it makes the remarkable women authorities in our field more visible. It also provides tangible evidence of the Organization's commitment to reaching gender parity. These optics are not lost on the many women members of the CTBTO Youth Group attending this year's conference either, who can be confident that there is room for them to lead in this space.

The CTBTO's approach to gender at SNT2017 is no accident. It is part of a larger commitment that the Organization has made to increasing the role of women in Treaty issues. Earlier this month, Dr. Lassina Zerbo, the Executive Secretary of the CTBTO, became a Gender Champion under the International Gender Champions initiative. In doing so, he became part of a network of senior leaders who have pledged to advance gender equality at their organizations. Upon joining, Dr. Zerbo instituted three new policies: First, to make working hours more flexible for new parents at the CTBTO; second, to create a shadowing program for students at a 4:1 ratio of women to men; and third, to involve more women in science-based diplomacy through the CTBTO Youth Group. These steps will help to address the two issues I identified at the outset. By creating workplace policies that make the CTBTO more friendly to women, the Organization makes it possible for them to rise to leadership positions. By providing channels for young women to become engaged with these topics, the CTBTO is helping to build a next generation of experts that is more balanced. By elevating women in concrete and visible ways, the CTBTO is addressing the existing gender disbalance in our field. It is also helping to establishing a new standard to which other international organizations and negotiating bodies dealing with nonproliferation and disarmament should aspire. As both a woman and a member of this next generation, I appreciate these efforts. It is changes like these will let me make my most valuable contribution



**+ GENDER BALANCE**  
**THE CYG IS PROUD TO BE**  
**56% WOMEN**



# + DIALOGUE

**LIVE FROM THE UN  
GENERAL ASSEMBLY,  
THE CTBTO EXECUTIVE  
SECRETARY LASSINA  
ZERBO IN A  
CONVERSATION WITH  
CTBTO YOUTH GROUP  
(CYG) MEMBERS SETOU  
OUTTARA AND CARLOS  
RODRIGUEZ CRUZ Y  
CELIS.**



**CO-PANELISTS PROFESSOR MATTHEW YEDLIN AND CYG MEMBER SAHIL SHAH DISCUSSING  
ADVOCACY IN THE DIGITAL AGE AT THE 2017 CTBTO SNT CONFERENCE**



**KEEP UP-TO-DATE WITH THE CTBTO YOUTH GROUP ON  
TWITTER VIA THE [#YOUTH4CTBT](#) HASHTAG!**

## + CYG REPORT “ELEVATING THE PROFILE OF THE CTBT IN THE NPT CONTEXT: A RATIONALE AND RECOMMENDATIONS FROM THE NEXT GENERATION”

The 2017 NPT PrepCom, which ran from 2 May to 12 May at the Vienna International Centre, is the first of three sessions that are scheduled to be held leading up to the 2020 NPT RevCon. At the three PrepCom sessions, States parties to the NPT, will discuss substantive and procedural issues relating to the Treaty and the 2020 NPT RevCon. In the opening session, distinguished speakers including Japanese Foreign Minister Fumio Kishida, underlined the vital importance of an in-force CTBT in the NPT context.

On 4 May 2017, CTBTO Youth Group members organized a side event in connection to the 2017 Preparatory Committee for the 2020 Nuclear Non-Proliferation Treaty Review Conference entitled “Enhancing the role of the CTBT in the NPT review process”. The event highlighted the research findings of members of the CTBTO Youth Group from the James Martin Center for Nonproliferation Studies in Monterey, California. The graduate students investigated ways to elevate the profile of the Comprehensive Nuclear-Test-Ban Treaty in the NPT context with the objective of promoting its entry into force. Dr. William Potter, founding director of the Center for Nonproliferation Studies, moderated the event, and Leigh Turner, UK Ambassador to Austria and Permanent Representative to the United Nations and Other International Organizations in Vienna, delivered closing remarks.



**“The CTBT should occupy a place of prominence during the 2020 NPT review cycle” the six CTBTO Youth Group Members argued on the basis of their research findings.**

Efforts to ban the testing of nuclear weapons and to stop both their horizontal and vertical spread have been pursued in tandem for more than six decades. In a paper entitled, “Elevating the Profile of the CTBT in an NPT Context: A Rationale and Recommendations from the Next Generation,” members of the CTBTO Youth Group trace the historical arc of this relationship—one defined by close political and normative linkages. They emphasize that the CTBT and the NPT have historically formed the backbone of the global nonproliferation order and are therefore mutually reinforcing. In this light, they demonstrate that discourse surrounding nonproliferation and disarmament in the NPT context today is less holistic and more fractured when the importance of the CTBT is deemphasized, minimized, or absent. Likewise, a fundamental rationale for the entry into force of the CTBT—to curb nuclear testing in advancing nonproliferation and disarmament—lacks urgency if the Treaty is divorced from the NPT.

To actualize their recommendations, they identify new and creative places where these two Treaties reinforce one another, and they propose four ways to raise the profile of the CTBT more generally in the context of the NPT.

**+ READ THE REPORT SUMMARY OR FULL TEXT TODAY**



# + CONFIDENCE

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## REGIONAL FOCUS

Regional confidence building has been a thread that has consistently run throughout all CTBTO Youth Group endeavors this past year. Whether represented in joint op-eds, research projects, or events hosted across the globe, an emphasis has been placed on cultivating relationships between CYG members through regional-level dialogue.

Perhaps the best manifestation of regional confidence building was when over one hundred students and CYG members joined Executive Secretary Lassina Zerbo, Russian Deputy Foreign Minister Sergey Ryabkov, members of the Group of Eminent Persons, and other VIPs for the Moscow CYG Conference in October. The event was co-hosted by the CTBTO and the National Nuclear Research University/Moscow Engineering and Physics Institute (MEPhI), and supported by the Russian Federation's Ministries of Defense and Foreign Affairs.

The Conference brought together members of the CYG, including nationals of seven of the eight remaining Annex 2 States, and Russian students, and offered an opportunity to exchange ideas and perspectives on international security issues. Participants had the opportunity to discuss regional perspectives, learn more about CTBT verification technologies and exchange ideas with high level speakers on how to advance the entry into force of the CTBT. The conference benefited from the expertise of prominent arms control figures: Ambassador Grigory Berdennikov, Viktor Slipchenko, Konstantin Danilenko, Major General Kolesnikov, MEPhI Rector Mikhail Strikhanov, former IAEA Director General Hans Blix, Ambassador Susan LeJeune d'Allegre, former United Nations Under-Secretary-General for Economic and Social Affairs, Ambassador Sha Zukang, Professor Ramamurti Rajaraman, Deborah Gordon, and Peter Rickwood (Atomic Reporters).

CYG members moderated panels, presented research papers and provided "citizen journalism" coverage of the Conference through the CYG Newsroom project. Each research project involved a peer-review process in which CYG members from the countries under scrutiny worked with those writing on their countries to produce nuanced, credible conclusions on the prospects for ratification.

For the purpose of this annual report, the Middle East/South Asia regions are used as examples to illustrate how the CYG has been able to build regional confidence through meaningful group statements, research output, opinion-editorials, and in-person dialogue through its meetings and workshops.

**"Apart from raising the topic of political issues and providing us with an in-depth analysis of the technological side of the CTBTO, the conference itself undoubtedly expanded our outlooks and broadened our minds in terms of the interaction with youth group members. The CYG is comprised of students from various countries; consequently, communication with them gave us an outstanding opportunity for developing cross-cultural awareness and sharing experiences. It is also of high importance for us to realize that any effort put into implementing the Treaty by youth group members is regarded with great attention and is highly appreciated by the leaders."**

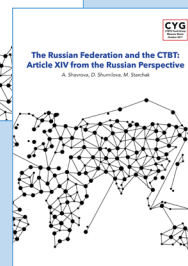
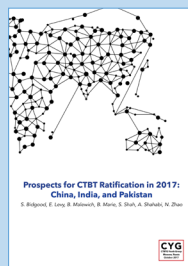
- VERONIKA ZADREMAILOVA, RUSSIAN CYG MEMBER



## + CONFERENCE REPORT



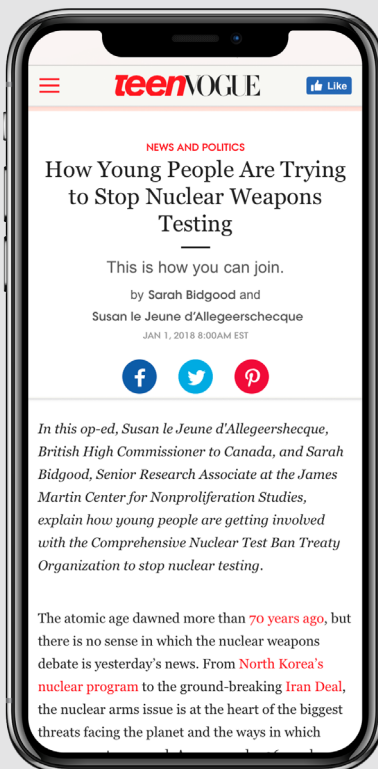
**CONFERENCE PARTICIPANTS PRODUCED A PEER-REVIEWED, 60+ PAGE REPORT DETAILING PROSPECTS FOR CTBT RATIFICATION IN THEIR COUNTRIES**  
[http://bit.ly/cyg\\_moscow](http://bit.ly/cyg_moscow)







# + PUBLICATIONS



As part of the Stimson Center's Off Ramps Initiative, CTBTO Youth Group Members Sylvia Mishra (India) and Sarah Bidgood (USA) wrote a recent piece to draw attention to the nuclear competition among China, India and Pakistan. This piece is one of many examples of reports and op-eds written by the CTBTO Youth Group that highlight the importance of the CTBT's entry into force for all countries as it provides tangible value to the international community. It also suggests that India and Pakistan hosting IMS Stations on their territories would help to promote transparency in confirming India and Pakistan's non-testing to one another.

Ambassador Laura Holgate (Senior Fellow, Belfer Center for Science and International Affairs, Harvard Kennedy School) mentioned the aforesaid idea on confidence-building from the piece at the Atlantic Council's "Nuclear Strategy and Security in the Second Nuclear Age" Conference in Washington, DC.

## + A FULL LIST OF PUBLICATIONS IS AVAILABLE ONLINE



## + SOUTH ASIA CASE STUDY



KEN BEN CHAO

India and Pakistan are two of the remaining eight Annex II countries whose ratification of the CTBT is necessary to bring the Treaty into force. At the 2017 Science and Technology Conference, members of the Youth Group Aditi Malhotra, Beenish Pervaiz, and Hamzah Rifaat facilitated a workshop to brainstorm and discuss the CTBT in a South Asian regional context. The aim of the workshop was to inspire the participants to engage in a constructive discussion and delve on various stakeholders that enjoy influence on India and Pakistan's nuclear policies.

It is often said that youth can help address and resolve some of the world's most critical issues due not only to their enthusiasm and creativity, but also to the fact that they share a common future regardless of their nationalities. While the overall spirit of the workshop was highly positive, there were some points of disagreements. Some youth participants from India and Pakistan could not escape the many points of contention between their countries. Many of them held the official positions of their governments and, at a few notable points in the workshop, almost quarreled with each other if not for the timely intervention of the facilitators to keep the workshop focused in a productive direction.

Nonetheless, the plenary discussions were dynamic, and convinced the participants and audience members that despite their differences, youth members can identify areas where they could engage fruitfully. Two themes emerged from the proceedings of the workshop. First, despite the points of contentions between the countries, there is scope for greater interactions between various media portals, academic communities, non-government organizations, etc. Second, it is imperative to engage the masses and understand the broader public opinion on nuclear and CTBT-related issues.

Overall, the workshop also demonstrated the importance of empowering youth to engage with each other. The facilitators fostered an environment that was conducive to constructive discussion, enabling participants to question their own beliefs and engage with those of others. Towards the end, the facilitators urged the participants to realize their own potential to influence their local communities. In this context, the exercise of identifying the stakeholders proved worthwhile as it brought out new areas and ways through which the youth members could engage their communities more effectively. That the workshop was initiated and facilitated by two Pakistani and one Indian youth group members showcased their shared enthusiasm in bringing a positive change to South Asia's nuclear narratives.



# + SCIENCE FOR PEACE

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The Comprehensive Nuclear-Test-Ban Treaty bans nuclear explosions by everyone, everywhere: on the Earth's surface, in the atmosphere, underwater and underground making it very difficult for countries to develop nuclear bombs for the first time, or for countries that already have them, to make more powerful bombs. It also prevents the huge damage caused by radioactivity from nuclear explosions to humans, animals and plants.

The CTBTO has established an International Monitoring System (IMS) that span the globe, making it impossible to conduct a secret nuclear test anywhere on the planet. The data generated by the network are also used in a wide range of other scientific applications, such as tsunami early warning, tracking meteors and volcanic ash plumes, and even studying marine mammals. The scientific and technical aspects of the CTBTO monitoring, verification, and inspection regime are its true strength. Thus, it is natural that the CTBTO Youth Group took every opportunity to further learn about the science behind the treaty, as well as contribute their own research to strengthening its mandate.

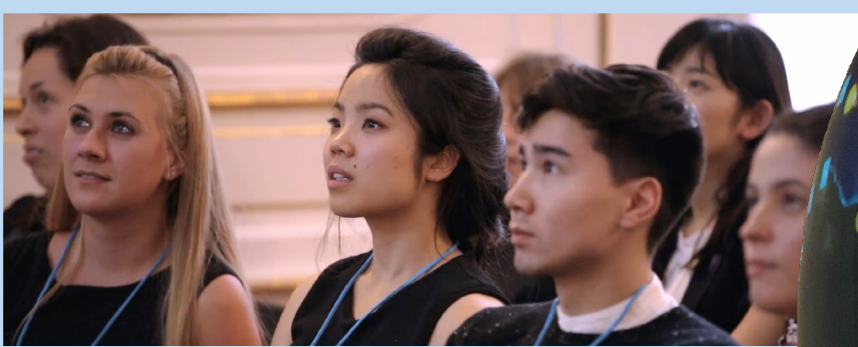
This past June marked the week-long 2017 CTBT: Science and Technology Conference (SnT17) in Vienna, Austria. The conference is held every two years and provides an opportunity for scientists from around the world to meet and exchange findings on nuclear test verification science and a wide range of other applications for the data collected under the mandate of the CTBTO. More than a thousand registered participants from over 120 countries, 650 submitted abstracts, nearly 400 posters and over 100 oral presentations, made the latest conference in the Hofburg Palace in Vienna the largest of its kind to date. The Conference included an important youth element with more than 70 CTBTO Youth Group members from over 50 countries that presented their own papers and outreach projects, participated in workshops and discussions, and tried their hands at "citizen journalism" in the "Youth Newsroom" project.

After SnT17, CTBTO Youth Group members from all corners of the world traveled to the Russian Federation. While there, CYG members visited the National Data Center, which is part of the Russian segment of the

CTBTO IMS. The system for the long-range detection of nuclear tests is functions under the leadership of the Special Control Service (SSC), which is a part of the 12th Main Directorate of the Ministry of Defense of the Russian Federation. The National Data Center was established on August 25, 2005 in accordance with the CTBT. In Russia, a segment of infrasound and radionuclide stations, as well as primary and secondary seismic stations, is being created. Radionuclide stations provide continuous monitoring of radioactivity in the air for the purpose of recording nuclear explosions. Infrasound stations are designed to record infrasonic waves from air and ground nuclear explosions.

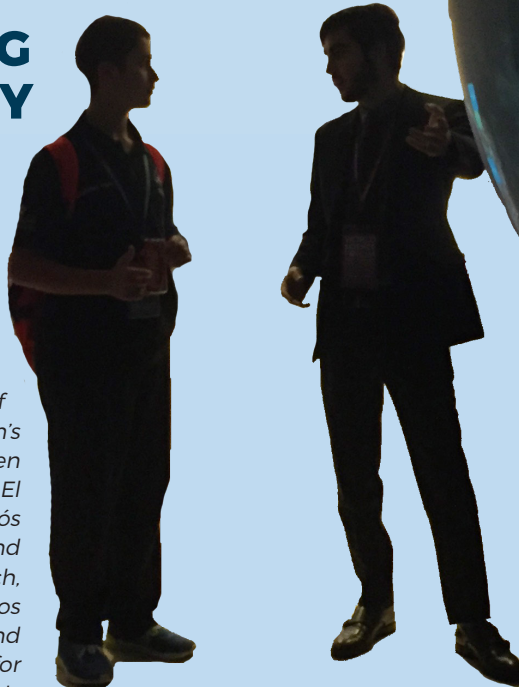
In addition to the CTBTO SnT17 and the CTBTO Youth Conference, the November World Science Forum (WSF) 2017 at the Dead Sea in the Hashemite Kingdom of Jordan attracted over 3.000 participants from 140 countries representing the scientific community, policy makers, international organizations, and youth. Hosted by the Royal Scientific Society of Jordan, together with UNESCO, the Hungarian Academy of Science, the International Council for Science, and the American Association for the Advancement of Science, the Forum provided an opportunity to engage the world of science and redefine the global potential of scientific communities and policymakers to bring real change to our interlinked societies. CTBTO Youth Group Members accompanied CTBTO ES Lassina Zerbo to the Dead Sea to showcase how the CTBT IMS is a concrete "tool for peace" that provides valuable scientific data to the research communities to further support studies in areas such as disaster prevention, ecology and geophysics.

WSF 2017 Chairwoman (and SnT17 keynote speaker) HRH Princess Sumaya bint El Hassan welcomed CTBTO Youth Group Members, as well as youth from across the region and globe, to partake in the conference proceedings. The CTBTO Youth Group actively participated in the Forum, namely by showcasing two exhibits -- the CTBTO "OmniGlobe", an interactive 3-D display of the International Monitoring System, as well as another on the CTBTO's hydroacoustic station HA04 in the Crozet Islands (France).



## **+ LEVERAGING TECHNOLOGY**

*CTBTO Youth Group member Zachary Berenson-Barros presents the OmniGlobe exhibit to other young professionals attending the 2017 World Science Forum. The OmniGlobe was seen by many visitors and VIPs to be one of the highlight exhibits of the WSF. Members of Jordan's royal family, including Queen Noor Al-Hussein and Prince El Hassan bin Talal, as well as Janós Ader, President of Hungary, and EU Commissioner for Research, Science and Innovation, Carlos Moedas, visited the Globe and expressed their appreciation for CTBTO's work.*





## BREAKTHROUGHS FOR THE CTBTO: RADIOXENON ISOTOPIC RATIOS

CTBTO Youth Group member Emily Gordon is an engineering student at University of Illinois at Urbana-Champaign and a current intern at the Center for Science and Peace Research at the University of Hamburg.

Her presentation, “Optimizing the Chances for Detecting Nuclear Test Signatures Using Radioxenon Isotopic Ratios” explored xenon as an indicator of nuclear testing and proposed a more effective method for source discrimination.

**In Emily’s words, “At least for the United States, one of the Senate’s reasons why the treaty hasn’t been ratified is that the verification regime isn’t at full capacity. But I think this work shows that it is, and the U.S. should ratify the CTBT.”**

## ABSTRACT

In the context of CTBT verification, isotopic ratios of xenon are used to distinguish civilian sources of radioactivity from nuclear test events using a threshold value that separates the reactor and nuclear test domains. Two methods exist to calculate the confidence range of the ratios: Bayesian decision method, and Fieller’s Theorem. The purpose of this project is to select the best method tuned to provide the optimized screening results. This is accomplished by comparing the effectiveness and robustness of each method for source discrimination. First each method is applied to data from IMS radionuclide stations twice, once using a one standard deviation confidence interval, and once using a two standard deviation confidence interval. A threshold isotopic ratio for screening is then defined by setting the rate of false positives (type II error) to 5%. Next, the results of each method and choice of confidence interval were “scored” using hypothetical data from simulated nuclear tests added to real atmospheric background in selected IMS samples. The best method is the one with the highest detection rate.

Optimizing the Chances for Detecting Nuclear Test Signatures of Prompt and Early Releases Using Radioxenon Isotopic Ratios  
E. Gordon, M. Kalinowski, H. Gheddou, J. Kusmierczyk-Michulec, B. Liu, M. Schoepfner.



**CTBTO GEM MEMBER LORD DESMOND BROWNE:** SAHIL SHAH, A MEMBER OF THE CTBTO YOUTH GROUP, ADDRESSED YOU EARLIER THIS WEEK AND HE SHARED HIS SPEECH WITH ME. I WANT TO CLOSE WITH SAHIL'S WORDS, BECAUSE HE MAKES THE CASE BETTER THAN I CAN MAKE IT:



**“WE (THE YOUTH) NEED YOU TO **SHARE WITH US** THE WAYS IN WHICH WE CAN BETTER UNDERSTAND (HOW) ARGUMENTS ROOTED IN SCIENCE AND TECHNOLOGY CAN BE SOCIALIZED TO INFORM OUR POLITICS. IF WE DO NOT **WORK TOGETHER**, WE WILL LOSE THE CHANCE TO TURN SCIENTIFIC AND TECHNICAL EXPERTISE INTO A RADICAL AGENT FOR CHANGE. TOGETHER, WE MUST **CREATE MORE MEANINGFUL OUTCOMES.**”**



**RAMESH JAURA OF INDEPTH NEWS SPEAKS WITH CTBTO YOUTH GROUP MEMBER SHIZUKA KURAMITSU OF HIROSHIMA, JAPAN. KURAMITSU MET THE CTBTO'S EXECUTIVE SECRETARY IN HIROSHIMA IN 2016 AND LATER HELPED LAUNCH THE CTBTO YOUTH GROUP. HER HERITAGE IS A CONSTANT REMINDER OF THE HUMANITARIAN CONSEQUENCES OF NUCLEAR TESTING AND USE.**

**READ MORE AT [INDEPTH NEWS & THE UN NEWS CENTRE](#)**

“In a series of events during the five days, the [CTBTO Youth] Group members ... proved their ability to revitalize the discussion around the CTBT among decision-makers, academia, students, expert society and media, to raise awareness of the importance of the nuclear test-ban, build a basis for knowledge transfer to the younger generation, involve new technologies into promoting the CTBT – social media, digital visualization, interactive means of delivering information, and the capability to place the CTBT on the agenda of the world's most important nuclear-related events.”



# CYG GROUP STATEMENT:

**100+ CYG Members Endorse the Declaration of the 8th World Science Forum on “Science for Peace” adopted on 10 November 2017, Dead Sea, Jordan.**

Themed around the banner of “science for peace”, the World Science Forum 2017 (WSF 2017) was held at the Dead Sea in the Hashemite Kingdom of Jordan from November 7-10, 2017. During WSF 2017, the Comprehensive Nuclear-Test-Ban Treaty Organization highlighted the ways in which its International Monitoring System (IMS) acts as a catalyst for sustained peace and development. The IMS showcases the importance of the CTBT’s ratification by all countries, as the CTBTO provides critical information not limited to potential nuclear detonations but also regarding earthquakes and tsunami warnings.

**As said by WSF 2017 Chairwoman HRH Princess Sumaya bint El Hassan, “Every single person on this planet has a right to live in a safe world, and the CTBTO is an organization that is the leader in protecting public health and safety for civilians”.**

CTBTO Youth Group members accompanied CTBTO Executive Secretary Lassina Zerbo to the WSF 2017 in an effort to showcase the relevance of the IMS to the theme of “science for peace” and help expand the definition of “insecurity” to be more inclusive of the food, water, and energy insecurity spawned by climate change. These issues, which accelerate forced migration and economic hardship that place many precarious populations into further poverty or conflict-prone situations, do discriminate as they hit the poor first and worst. The interconnectedness of these issues should be kept in mind by all generations when imagining innovative solutions such as the CTBTO IMS in an effort to build sustained peace and development for all.

We, the undersigned, fully endorse the Declaration of World Science Forum 2017 and urge our supporters to read it. The document offers a holistic yet concise framework for how scientific and policy communities can better the world together. While the full version is available here, the main headings are provided:

## #ICYMI

### IN CASE YOU MISSED IT:

Read the CTBTO Youth Group’s (CYG) first group statement in reaction to the 3 September 2017 Announced Nuclear Test by the DPRK, also signed by 100+ members [\[LINK\]](#).



- 1. THE EQUITABLE AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES IS ESSENTIAL TO AVOID CONFLICTS AND TO PROMOTE PEACEFUL DEVELOPMENT.**
- 2. THE PRESERVATION OF SCIENTIFIC CAPACITIES, THREATENED BY GLOBAL MIGRATION TRENDS, IS KEY TO PEACE, SUSTAINABLE DEVELOPMENT, RESILIENCE AND RECOVERY.**
- 3. DIVERSITY IS A KEY ENABLER OF EXCELLENCE IN SCIENCE, TECHNOLOGY AND INNOVATION AND IS ESSENTIAL TO OPTIMISE ITS RELEVANCE AND IMPACT.**
- 4. WE COMMIT TO THE FULFILMENT OF THE UNIVERSAL RIGHT TO SCIENCE.**



**“LASTING PEACE MAY ONLY BE ACHIEVED IN OUR WORLD WHEN SCIENTIFIC KNOWLEDGE IS MORE EQUITABLY PRODUCED AND SHARED, WHEN SCIENCE AND EVIDENCE-BASED THINKING ARE SUPPORTED AND EMPOWERED IN ALL SOCIETIES, WHEN DIVERSITY IS CHERISHED AS A VITAL FACTOR IN SCIENCE AND RESEARCH, AND WHEN THE UNIVERSAL RIGHT TO SCIENCE IS PROMOTED AND ENSHRINED IN REGIONAL AND GLOBAL FORA.” - DECLARATION OF THE 2017 WORLD SCIENCE FORUM**







**CTBTO**  
PREPARATORY COMMISSION

PUTTING AN  
END TO NUCLEAR  
EXPLOSIONS



The CTBTO Youth Group's aim is to revitalize the discussion around the CTBT among decision-makers, academia, students, expert society and media. By raising awareness of the importance of the nuclear test-ban, the CYG hopes to help develop the next generation's capacity to address the pressing foreign, defense, and security policy challenges of our time.

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The views expressed herein are those of the CYG, and do not necessarily reflect the views of the European Union or the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO).

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To view the online version of the report and visit the many included links, please visit

**[http://bit.ly/CYG\\_17](http://bit.ly/CYG_17)**



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